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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/867,462	05/31/2001	Toshiya Matsubara	209194US0	6882

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EXAMINER

TRAN, THAO T

ART UNIT

PAPER NUMBER

1711

DATE MAILED: 03/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/867,462

Applicant(s)

MATSUBARA ET AL.

Examiner

Thao T. Tran

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4,6 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 2-4 and 6 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific asserted utility or a well-established utility.

Claim 2 contains both a hollow glass microsphere and a method of determining the amount of boron in the glass composition. Therefore, the same claim is directed to neither a product or a method of determining the amount of a constituent in the composition of the product, but rather embraces or overlaps two different statutory classes of invention as set forth in 35 USC 101, which is drafted so as to set forth the statutory classes of invention in the alternative only. See **MPEP 2173.05(p)**.

Claim 6 contains both a process of making hollow glass microspheres and a method of determining the amount of boron in the glass composition. Therefore, the same claim is directed to neither a process of making a product or a method of determining the amount of a constituent in the composition of the product, but rather embraces or overlaps two different statutory classes of invention as set forth in 35 USC 101, which is drafted so as to set forth the statutory classes of invention in the alternative only. See **MPEP 2173.05(p)**.

Claims 2-4 and 6 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific asserted utility or a well

established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 2-4, 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 is indefinite because the claim contains both the hollow glass microsphere and a process of determining the boron content in the microsphere. Since the claim is directed to a product and a method of determining the amount of a constituent in the product, the claim is held to be ambiguous and indefinite.

Claim 6 is indefinite because the claim contains both a process of making hollow glass microspheres and a process of determining the amount of a constituent in the product. Since the claim is directed to both processes, it is held to be ambiguous and indefinite. See **MPEP 2173.05(p)**.

Double Patenting

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

Art Unit: 1711

provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1-20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-2 and 4-7 of Co-pending Application, Ser. No. 09/858,571. Although the conflicting claims are not identical, they are not patentably distinct from each other; because the instant claims contain the subject matter that is broader in scope than that of the claims of the Co-pending Application, rendering them obvious over each other.

The claims of the Co-pending Application teach all the limitations as recited in the instant claims. In addition, the claims of the Co-pending Application further teach a range of sphericity, a strength, thickness, and hollow radius of the hollow glass microspheres, making the claims of the Co-pending Application narrower in scope than that of the instant claims. Thus, the scope of the instant claims encompasses that of the claims of the Co-pending Application, rendering them obvious over each other.

7. Claims 1-20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7 of US Pat. 6,531,222. Although the conflicting claims are not identical, they are not patentably distinct from each other; because the instant claims contain the subject matter that is narrower in scope than that of the claims of the patent, rendering them obvious over each other.

The instant claims teach all of the limitations as recited in the claims of the patent. In addition, the instant claims further teach other specific components, besides boron oxide, in the hollow glass microspheres, making the instant claims narrower in scope than that of the claims of

the patent. Thus, the scope of the claims of the patent encompasses that of the instant claims, rendering them obvious over each other.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claim 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawachi et al. (US Pat. 5,591,684).

Kawachi teaches a glass bubble and a method of making, comprising adding a combustible liquid (isopropyl alcohol) to a glass starting materials containing a foaming component (blowing agent) to form a slurry, wet-pulverizing (heating the slurry) to obtain powders (see col. 6, ln. 40-56).

The glass bubble has a composition, consisting essentially of, by weight, 40.0-60.0% of SiO₂, 5.0-22.0% of Al₂O₃, 3-20% of B₂O₃, 10-30% CaO, 0-15% BaO, 0-10% MgO, 0-10% ZnO, 0-10% SrO, 0-19% Na₂O+K₂O+Li₂O (see Tables 1-2; claims 1 and 5).

Kawachi further teaches the glass bubble having a diameter of 38 microns or less and an average relative density of 0.66-1.25 g/cm³. (see Table 2; col. 7, ln. 38; claim 6), substantially overlapping the instantly claimed ranges.

Kawachi is silent with respect to the average particle size. However, it would have been within the skill in the art that since Kawachi teaches the same composition of the hollow glass

Art Unit: 1711

microsphere and substantially overlapping maximum particle size and density, that Kawachi's glass bubble would inherently have the same average particle size as that in the presently claimed invention.

In regards to claim 2, Kawachi teaches the weight % of boron oxide being 3.0-20.0% (see claim 5). With respect to how an eluted amount of boron is determined, it would have been within the skill in the art that process limitations ^{on determining a constituent} would have little significant patentable weight in a claim directed to a product or a method of making.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aria et al. (US Pat. 5,849,055), as evidenced by Kawachi.

Aria teaches a process of making hollow glass microspheres, comprising the steps of adding a combustible liquid (flammable liquid such as kerosene, alcohol) into a glass starting material, pulverizing the material to obtain a slurry with an average particle size of at most 3 microns, spraying the slurry into liquid droplets, and heating the liquid droplets to form the glass microspheres (see claims 1-4, 7).

The glass starting material contains 82% weight of SiO_2 , 2% weight of Al_2O_3 , 13% weight of B_2O_3 , and 3% weight of Na_2O (see col. 11, ln. 4-9). The hollow glass microspheres

Art Unit: 1711

produced have an average particle size of 15 microns, wherein the maximum particle size is at most 50 microns, and a density of 0.5 g/cm^3 (see Examples 3, 8 and 11).

Aria differs from the instant claim because the reference teaches the weight percent of Al_2O_3 to be 2% instead of 10-25%. However, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, that the concentration of Al_2O_3 would have been increased to the instantly claimed range, because Al_2O_3 concentration in this particular range has been known for increasing glass durability, as evidenced by Kawachi (see col. 3, ln. 23-26).

In regards to claim 14, Arai teaches the use of an ultrasonic sprayer (see col. 4, ln. 55).

In regards to claims 16-20, Arai teaches the glass microspheres are recovered by a bag filter and then mixed with water and followed by centrifugal separation, the microspheres are classified by classifying treatment, and the portion of the material not being used after classification is recycled to the wet-pulverizing step (see col. 5, ln. 22-24; col. 11, ln. 25).

Contact Information

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao T. Tran whose telephone number is 703-306-5698. The examiner can normally be reached on Monday-Friday, from 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 703-308-2462. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

• Art Unit: 1711

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

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March 17, 2003



James J. Seidleck
Supervisory Patent Examiner
Technology Center 1700